Chapter 8 / **Example 5a**

Calculating with complex numbers

Let $z_1 = 2 + 3i$ and $z_2 = 3 - i$.

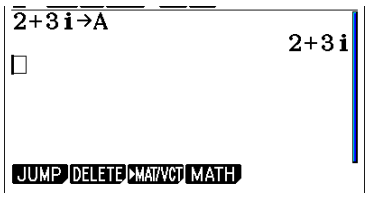
a Calculate each of the following, writing your answers in the form $a + bi$.

i $2z_1 + 3z_2$ **ii** $z_1 z_2$ **iii** $\dfrac{z_1 + z_2}{z_1 - z_2}$

Press MENU 1 RUN·MAT to display the Run-Matrix screen for arithmetical calculations.

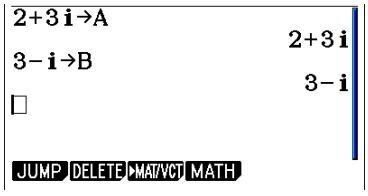
Type 2 + 3i → ALPHA A and press EXE.

To enter i press SHIFT 0 ***i***.



Type 3 – i → ALPHA B and press EXE.

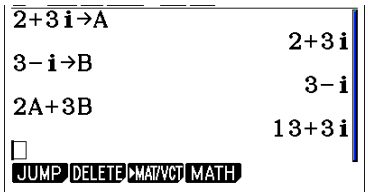
To enter i press SHIFT 0 ***i***.



$z_1 = A$ and $z_2 = B$.

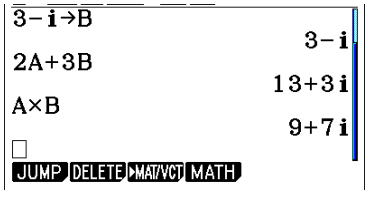
To calculate $2z_1 + 3z_2$ type $2A + 3B$ and press EXE.

$2z_1 + 3z_2 = 13 + 3i$.



To calculate $z_1 z_2$ type $A \times B$ and press EXE.

$z_1 z_2 = 9 + 7i$.



To calculate $\dfrac{z_1 + z_2}{z_1 - z_2}$ type $\dfrac{A+B}{A-B}$ and press enter.

Use the fraction template ▣ ⏸

$\dfrac{z_1 + z_2}{z_1 - z_2} = \dfrac{3}{17} - \dfrac{22}{17}i$.